



# International Society for Concrete Pavements

ISCP e-Newsletter

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## CORPORATE MEMBERS



## What's New at ISCP

### 2006 Member Survey on ISCP's Future Plans and Ninth International Conference



Planning for the ninth international conference on concrete pavements is underway! The steering committee for the conference will be meeting in Chicago in mid June to discuss the date, location, and program for the next conference. The tentative date for the next conference is mid August 2008. During this quarter we are conducting a survey of all individual and organizational members of ISCP, to gather input on the Society's current activities and future directions. This is your opportunity to let the officers and directors of ISCP know what you think about the direction in which the Society should head in the future. The survey also provides you with an opportunity to comment on plans for the next international conference.

The results from the survey will be reported to the Board of Directors at its July meeting in Evanston, Illinois, and will be summarized in the next quarterly newsletter. The survey results will be used to develop a strategic plan for the Society. We hope to have the first draft of this strategic plan ready to present to the Board of Directors for discussion at its January 2007 meeting.

The [survey](#) is being sent to all members by email, and responses should be sent to me at [katiehall@concretepavements.org](mailto:katiehall@concretepavements.org). Even after you return your response to the survey, please feel free to contact me at any time at that email address with any comments or suggestions you have about the work on the strategic plan or the planning for the ninth international conference. I look forward to hearing from you.

Katie Hall, Vice-President, ISCP  
[katiehall@concretepavements.org](mailto:katiehall@concretepavements.org)

### ISCP Board Meetings Scheduled

The next meeting of the ISCP Board of Directors will be held on Tuesday, July 11 at 7:30 p.m. in one section of the Grand Ballroom of the Hotel Orrington in Evanston, Illinois, USA (just north of Chicago). As usual, the ISCP board meeting will be open to the general membership. An agenda will be posted on the ISCP website about two weeks prior to the meeting. The main items of discussion are expected to be election of new honorary members and discussion of the results of the 2006 Member Survey (distributed electronically earlier this month).

The American Concrete Pavement Association is holding its Annual Mid-Year meetings at the Hotel Orrington and has graciously invited ISCP board members to attend their ACPA Welcoming Party at Carmen's of Evanston Pizzeria (1012 W. Church Street, just a few blocks from the hotel), which begins at 6:00pm.

Future board meetings are planned for mid-September in Belgium in conjunction with the 6th International DUT Workshop and 10th Symposium on Concrete Roads (time, date and location TBA), and for Tuesday, October 24 after the opening reception for the Long-Life Concrete Pavements Conference in Chicago, Illinois. Details on these meetings will be reported in future newsletters.

## PDH Self-report Form for 8<sup>th</sup> Conference Available Online

Many agencies that regulate professional engineering registration have established continuing education requirements (professional development hours or "PDHs") as a condition for registration renewal. Attendance at presentation and workshop sessions for last year's 8<sup>th</sup> International Conference on Concrete Pavements should qualify for formal PDH credits (please check with your registration board requirements to confirm).

PDH reporting in the U.S. is generally done on an "on-your-honor" basis and registrants are responsible for maintaining their own records. A "PDH Self-Report Form" for the 8<sup>th</sup> International Conference is now available on the ISCP website at [www.concretepavements.org](http://www.concretepavements.org) under the "Recent Updates" link.

## ISCP Corporate Member Profile: Prairie Material

In 1948, John Oremus founded Prairie Material with three trucks, a load of stone and a ton of ambition. John's success was built on the philosophy of better service to the customer, and it is based on these three principles: produce the highest quality products at competitive prices, provide excellent customer service, and always deliver products and services in a timely manner. These core values are still at the center of how Prairie continues to uphold John's tradition of excellence.

Over the years, Prairie has grown to be one of the largest family-owned and operated producers of ready-mix concrete in the Midwest. With four divisions serving customers in Illinois, Indiana, Michigan and Wisconsin, Prairie has the support structure in place to provide all the materials needed, for any size project.

In 1981 Prairie acquired Illinois Brick, and in 1984 Prairie opened its first stone quarry. Prairie now operates 12 quarries and has 17 brick locations.

ISCP's member contact for Prairie Material is Mr. Gerry Krozel, Vice President, 7601 West 79th Street, Bridgeview, IL 60455 (708) 458-0400.

Members are also encouraged to visit the Prairie website at [www.Prairiegroup.com](http://www.Prairiegroup.com).



## Industry Notes

### The Cement Association of Canada Welcomes its New President

Mr. Pierre Boucher joined the Cement Association of Canada (CAC) as President on June 1, 2006. Mr. Boucher has more than 30 years of experience as a manager, engineer and economist in government relations, business development, strategic planning, management of federal/provincial agreements, and planning and management of construction projects and engineering studies, as well as maintenance and operation of infrastructure projects. Mr. Boucher has also been involved in many associations including President of the Canadian Council of Professional Engineers and as a Board member of the Association de l'industrie électrique du Québec and the Canadian Hydropower Association.

ISCP looks forward to continued cooperation with the Cement Association of Canada under Mr. Boucher's leadership.

[www.cement.ca](http://www.cement.ca)

## Major in Concrete Industry Management

A new major in Concrete Industry Management (CIM) is being proposed by the College of Engineering, Computer Science, and Construction Management at California State University, Chico. It is the result of a partnership between the concrete industry and the university, which will offer students a unique blend of technical and management preparation in a new discipline and will help to meet this industry's employment demands. The proposed program is similar to an existing program at Middle Tennessee State University in Murfreesboro. Two other programs are being developed, one in Arizona to serve the Southwest and one in New Jersey to serve the Northeast.

At both the national and local level, the concrete industry is committed to creating more training programs for interested students. "The CSU, Chico CIM program is heading down the path of success due to the unique synergy of combining our excellent faculty with a broad coalition of industry partners," said Kristin Cooper-Carter, director of the program. "We are excited at the vast opportunities that this program has to offer; our students will be the ultimate benefactors of this partnership."

The CIM curriculum for CSU, Chico has been adapted to serve the climate, geography and needs of the West Coast and Northwest regions. Courses that will be developed to meet California's needs include: Sustainability and the Built Environment, Seismic Considerations in Concrete, and Concrete Fixtures and Surfaces (cast countertops, texturing and staining). "Other technical fields also face an acute shortage of Technical Managers," said Dirk Vanderloop, academic coordinator, CIM Program. "What sets the CIM Program and the concrete industry apart is the cooperation, involvement and financial support of companies, trade associations, professional associations and individuals. They can be cut-throat competitors in the marketplace, but are cooperating on this project. I've never seen anything like this collaboration in all my years of working with industry."

For more information, contact Kristin Cooper-Carter, CIM Director  
[cim@csuchico.edu](mailto:cim@csuchico.edu)

## Knowledge Exchange

FHWA is sponsoring web-based Communities of Practice (CoP) to promote free and open knowledge exchange on such topics as environment and planning, air quality, high performance concrete, and transportation asset management. Join a group of your peers throughout the highway community to discuss, collaborate, and exchange ideas and practices on a wide range of interesting and timely topics on one of the [FHWA Knowledge Communities](#).

## Research News

### ISCP Participates in International Scan on Long-Life Concrete Pavements

Dr. Shiraz Tayabji, ISCP Past President, was invited by AASHTO to participate as a member of the team selected to conduct an international scan of Long Life Concrete Pavements. The 17-day scan tour, undertaken during May 2006, visited Canada, Germany, Austria, Belgium, The Netherlands, and the United Kingdom. The scan tour was sponsored by the AASHTO/FHWA/NCHRP International Scanning Program. The scan team included fourteen concrete pavement experts and leaders from FHWA, State DOTs, academia, and industry (including ISCP). Dr. Katie Hall, ISCP Vice President, served as the Report Facilitator for the team.

The goal of the scan tour was to identify successful design approaches and construction practices for long-life concrete pavements. The following activities were conducted:



ISCP member Jerry Voigt, ACPA, and Suneel Vanikar, FHWA, at an Austrian motorway site.

Canada – meetings with the staff of the Ontario and Quebec Ministries of Transport in Toronto and visit to Highway 407 in Toronto (Host: Tom Kazmierowski, ISCP member and former ISCP Director)

Germany – meetings at the German Cement Works Association (VDZ), Dusseldorf; the Federal Highway Research Institute (BAST), Bergisch Gladbach; and the Technical University of Munich, Munich (Hosts: Professors Bernard Lecher and Gunther Leykauf. Also participating were ISCP Honorary Members Professor Rupert Springenschmid and Emeritus Professor Josef Eisenmann). A site visit was also made to a CRCP test section south of Frankfurt.

Austria – meetings at the Association of the Austrian Cement Industry, Vienna, jointly organized with the Austrian Federal Ministry of Transport. Also, visits to several concrete pavement projects. (Host: Dr. Johannes Steigenberger)

Belgium – meetings in Brussels organized by FEBELCEM with the Ministry of Equipment and Transport of the Walloon Region and the Infrastructure Agency of the Ministry of the Flemish Community. Also site visits to several concrete pavement projects. (Host: ISCP Director André Jasienski, FEBELCEM)

The Netherlands – meetings with C.R.O.W. Technology Centre staff and site visits to several concrete pavement projects. (Host: ISCP Member Adrian van Leest)

The United Kingdom – meetings at BritPave (Host: David Jones) and TRL.

The scan tour confirmed that well-designed and well-constructed concrete pavements continue to be important pavement types in the countries visited. All of the European countries visited are responding aggressively to pavement-tire noise issues and the exposed aggregate surface is the texture of choice in Germany, Austria, Belgium and the Netherlands. In the UK, the use of an asphalt-based wearing surface is mandated for concrete pavements. Also, Germany and Austria have successfully implemented the use of catalog designs for their jointed plain concrete pavements. Germany requires use of a geo-fabric as a separator layer between the CTB and the concrete pavement while the use of an AC interlayer is used in Austria. Belgium primarily uses CRC pavements.



From left: Professor Springenschmid, Professor Leykauf, Dr. Shiraz Tayabji, and Emeritus Professor Eisenmann.

A report detailing the findings of the scan tour and the recommendations for implementing promising findings in the US will be released later this year.

Submitted by: Shiraz Tayabji, Past President of ISCP  
[stayabji@concretepavements.org](mailto:stayabji@concretepavements.org)

## Seamless Pavement Will Be Closely Watched

The M7 Motorway west of Sydney (Australia) was opened to traffic late in 2005. This new motorway uses the seamless paving technique described in the award-winning paper at the 8th International ISCP conference and titled "Design and Construction of Seamless Pavement on Westlink M7". The 40km long motorway consists of thin layers of open on dense graded asphalt, on 240mm thick CRCP supported by a 150 mm lean mix concrete subbase.

The numerous small bridges on the motorway lend themselves to the continuous paving operations on land and over bridges without the use of terminal anchors. Other benefits of the seamless paving are:

- reduced maintenance at bridge abutments
- improved ride at bridges
- reduced noise due to no transverse joints at bridge abutments
- elimination of bridge deck drainage
- simplified construction due to no terminal anchors



More details about the concrete pavement can be found in the [paper](#).

Seamless paving has not been trialed on this scale anywhere in the world and Australian concrete pavement engineers will be eagerly watching its performance over the next decade.

Submitted by George Vorobieff,  
Member of ISCP Board of Directors  
[vorobieff@headtohead.com.au](mailto:vorobieff@headtohead.com.au)

## **International Conference on Long-Life Concrete Pavements Program Finalized**

The technical program for the INTERNATIONAL CONFERENCE ON LONG-LIFE CONCRETE PAVEMENTS has been finalized. The conference will be held in Chicago, Illinois (near O'Hare International Airport), October 25 to 27, 2006. The conference program consists of 35 peer-reviewed presentations on best practices related to long-life concrete pavements, based on international and US regional experiences and practices. There will be a total of nine technical sessions and two forums. The first open forum will be on the Strategic Directions for Implementing Long-Life Concrete Pavement Technologies. The second forum, of interest to analysts and pavement design engineers, will be on Theoretical Considerations for Long-Life Concrete Pavements. The findings from the recently completed AASHTO/FHWA sponsored scan of Canadian and European PCCP practices will be the focus of the Plenary Session.

The [International Society for Concrete Pavements](#) is co-sponsoring the conference. It is being organized as an activity under FHWA's Concrete Pavement Technology Program (CPTP). Other conference co-sponsors include the [American Association of State Highway and Transportation Officials](#), [American Concrete Pavement Association](#), [Cement Association of Canada](#), [Concrete Reinforcing Steel Institute](#), [Illinois Department of Transportation](#), [Portland Cement Association](#), and the [Transportation Research Board](#).



Early registration for the conference ends July 15, 2006. A preliminary technical program brochure is available at <http://www.concretepavements.org/llcp%20tech%20program.pdf>.

For more up-to-date information on the conference, including location, registration, program, hotel, exhibitor program, co-sponsorship, and organizer contacts, please visit:

<http://www.fhwa.dot.gov/pavement/concrete/2006conf.cfm>

or contact Shiraz Tayabji at: [stayabji@ctlgroup.com](mailto:stayabji@ctlgroup.com) (phone: 410-997-0400).

## **International Workshop in Brazil**

ISCP is co-sponsoring (with the Brazilian Concrete Institute, IBRACON) a workshop on the best practices for concrete pavements. This workshop, to be held in Recife, Brazil, will gather experts from around the world to present and share their experiences concerning the best practices for concrete pavement design, construction and management to produce long-life, low-maintenance concrete pavements in any transportation setting. Applications of interest include airports, streets and highways, heavy duty floors and harbors, as well as urban infrastructure installations, such as parks, sidewalks, parking lots, etc.

The workshop will address a broad range of topics, including cast-in-place and precast paving, reinforcing issues and concrete paving innovations, such as colored concrete and other architectural considerations and applications.

The workshop is scheduled for October 21-23, 2007 (mark your calendar!), and abstracts are now being accepted for consideration. Details concerning the workshop organization and registration can be found at <http://www.ibracon.org.br/pavement.workshop>.

# Featured Thesis Abstract

## FINITE ELEMENT SIMULATION OF CURLING ON CONCRETE PAVEMENTS

Dr. Zahidul Q. Siddique  
Currently working as a Transportation Engineer  
ARCADIS LNW, West Palm Beach, Florida, USA  
Ph.D. in Civil Engineering  
Kansas State University, Manhattan, Kansas, USA (2004)  
Thesis Advisor: Professor Mustaque Hossain

Curling results from the temperature and/or moisture differential across the concrete pavement slab thickness. The slab curls downward and upward when the slab experiences positive (temperature of the pavement top is higher than the bottom surface) and negative temperature differentials, respectively. Curling affects the pavement smoothness adversely.

In this study, three-dimensional Finite Element (FE) simulation of curling of concrete pavement has been presented. A finite element software, ANSYS was used to perform the simulation. A number of FE models were built using geometric and material properties obtained from several newly built concrete pavements in Kansas. The pavement sections were modeled as a three-layer system with Portland cement stabilized base (BDB) and lime-treated subgrade. Materials in different layers were modeled as linear elastic. Contact elements option available in the ANSYS library was used to model the interaction between the concrete slab and the dowel bars embedded in concrete. Temperature data was obtained using thermocouples and digital temperature data loggers. Regression models were developed for curling deflection and International Roughness Index (IRI), a roughness statistics, resulting from the curled profiles, based on different simulation parameters. Hourly curling deflections were also measured for several days on a test section. The results obtained from the field measurements were compared with the simulation results.

The results obtained from the simulation show that the curling deflection and IRI calculated from these deflected profiles are affected by the slab thickness, compressive strengths of the concrete and base layers, and temperature differential across the pavement slab thickness. Both curling deflection and IRI increase with an increase in temperature differential between the pavement top and bottom surfaces and compressive strength of the stabilized base layer. Curling deflections obtained from the field measurement show trends similar to those obtained from the FE simulation and are in very good agreements for lower temperature differentials. Effect of wheel loads, in addition to temperature load on curling, was also examined. For positive temperature gradient, critical stresses occurred when wheel loads were applied at the edge of the pavement. However, for negative temperature gradient, corner load produced the critical stresses.

The significant contributions of this study include digital separation of curling from the profile data, identification of the pavement design, material and climatic factors that affect curling, field measurement of curling, and a proposed modeling technique based on three-dimensional finite element analysis.

## Upcoming Events

### PCA/ACBM Undergraduate Faculty Enhancement Workshop

June 26-29, 2006 in Skokie, Illinois, USA

<http://lm.cement.org/t/7544/322009/338/0/>

### 2006 ACPA Mid-Year Meetings

July 10-13, 2006 in Evanston, Illinois, USA

[http://www.pavement.com/Events\\_and\\_Programs/Events/Mid-Year\\_Meetings/main.html](http://www.pavement.com/Events_and_Programs/Events/Mid-Year_Meetings/main.html)

### ECF 16 - 16th European Conference of Fracture

July 3-7, 2006 in Alexandroupolis, Greece

<http://ecf16.civil.duth.gr>

**6th International DUT-Workshop on Fundamental Modeling of Design and Performance of Concrete Pavements (formerly the CROW Workshop)**

September 15-16, 2006 in Priorij Consendonk , Old-Turnhout, Belgium  
<http://tinyurl.com/87stb>

**10th International Symposium on Concrete Roads**

September 18-22, 2006 in Brussels, Belgium  
<http://www.concreteroads2006.org/>

**American Concrete Institute Fall Convention**

November 5-8, 2006 in Denver, Colorado, USA  
<http://www.aci-int.org/Convention/Fall-Convention/Front.asp>



**International Conference on Long-Life Concrete Pavements**

Oct. 25-27, 2006 in Chicago, Illinois, USA  
<http://www.fhwa.dot.gov/pavement/concrete/2006conf.cfm>

**8th International Concrete Conference and Exhibition "Concrete in Hot and Aggressive Environments"**

November 27-29, 2006 in Manama, Kingdom of Bahrain  
<http://www.engineer-bh.com/icce/>

**Highway Geophysics Conference**

December 4-7, 2006 in St Louis, MO  
<http://www.umn.edu/2006geophysics/>

**Transportation Research Board 86<sup>th</sup> Annual Meeting**

January 21-25, 2007 in Washington, DC, USA  
<http://www.trb.org/meeting/>



**Advanced Characterization of Pavement and Soil Engineering Materials**

June 20-22, 2007 in Athens, Greece  
<http://www.3dfem.org>

**XXIIIrd World Road Congress**

September 17-21, 2007 in Paris, France  
<http://www.paris2007-route.fr/index.php?lang=en>



**International Workshop on Best Practices for Concrete Pavements**

October 21-23, 2007 in Recife, Pernambuco, Brazil  
[www.ibracon.org.br/pavement\\_workshop](http://www.ibracon.org.br/pavement_workshop)



**9th International Conference on Concrete Pavements**

Organized by ISCP  
August 2008 at a location to be determined  
<http://www.concretepavements.org/>

If you wish to submit an upcoming conference, meeting, or call for papers for the next ISCP e-newsletter, please contact us at [newsletter@concretepavements.org](mailto:newsletter@concretepavements.org).

The ISCP Newsletter is maintained by Editor-in-Chief, Dr. Erwin Kohler, Associate Editor, Jake Hiller, and Assistant Editor, Amanda Bordelon. Suggestions for future e-newsletters are welcomed at [newsletter@concretepavements.org](mailto:newsletter@concretepavements.org).

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